

Dosimetry Notifications

Los Alamos National Laboratory
ESH-RADPR-DP-01.0
Effective Date: 9/16/98

1.0 INTRODUCTION

This procedure formalizes the special notification reporting of year-to-date worker doses when these doses reach predetermined action levels. This is being done in an effort to keep worker doses below the occupational dose limits specified in LPR402-714.0, Occupational Dose Limits” and the whole body administrative control levels (ACLs) as specified in LIR402-702.01, “ALARA.”

2.0 PURPOSE

This procedure establishes actions to be taken to provide notification of radiation dosimetry results to appropriate personnel. This procedure also defines action levels that indicate when workers are approaching specific percentages of the dose limits.

3.0 SCOPE

This procedure applies to

- operations performed by ESH-1, ESH-4, and by the ESH-12 Dose Optimization Team, as part of the dosimetry reporting requirements of the Laboratory Radiation Protection Program as described in LPR 402-706, “Personnel Dosimetry”; and
- certain measured occupational doses at the Laboratory for a given calendar year.

The procedure does not apply to

- emergency exposures as described in LPR 402-706, “Personnel Dosimetry”;
 - planned special exposures, as specified in LPR402-711, “Planned Special Exposures”; and
 - internal exposures (Committed Effective Dose Equivalent (CEDE)) that are the result of intakes of transuranic radionuclides from unplanned operational incidents, e.g., accidental releases from primary confinement systems.
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4.0 DEFINITIONS

Action Level—for dosimetry reporting purposes this is a predetermined dose level used as a notification “flag”. This flag is used to notify the worker, line management,

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ESH-1 and the radiation protection program manager (RPPM) that the worker has exceeded a predetermined dose level and is potentially approaching an occupational dose limit or a whole body ACL.

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Standard radiation protection definitions can be found in "Radiation Protection Glossary" in Appendix G of Laboratory Performance Requirements. The following terms are of use for this procedure:

Terms	Bioassay (TEDE)	total effective dose equivalent
	dose	whole body
	committed dose equivalent	embryo/ fetus
	committed effective dose equivalent	extremity
	cumulative total effective dose equivalent	lifetime dose
	dose equivalent	occupational dose
	effective dose equivalent	personnel dosimetry
	external dose	personnel monitoring
	internal dose	rem
	lens-of -the-eye dose equivalent	year.
	shallow dose equivalent	

5.0 RESPONSIBILITIES

The ESH-1 Health Physics Operations group provides radiation protection support to the line organizations and assesses the radiation protection needs of the Laboratory groups and facilities. Corresponding to this procedure, when dosimetry notification reports are provided to ESH-1 team leaders, the team leaders are responsible for providing consultation to line management on efforts to manage doses for employees who are approaching percentages of the doses limits. These responsibilities and work processes are conducted in accordance with the ESH-1 Quality Assurance Program Plan (QAPP) ESH-1-01-11 Rev. 0.

ESH-4 Personnel/Dosimetry Operations Team maintains an external dosimetry measurements program that is accredited by the Department of Energy Laboratory Accreditation Program (DOELAP) for external dosimetry systems. The requirements for DOELAP accreditation are referenced in the DOELAP Handbook

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(DOE/EH-0026). The responsibilities that ESH-4 has in meeting DOELAP requirements and, correspondingly, those of this procedure are referenced in the ESH-4 Personnel Dosimetry Operations Team Quality Assurance Program Plan (ESH4-PDO-QAPP-01).

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ESH-12 Radiation Information Management Team operates and maintains an occupational radiation exposure record-keeping and reporting computer program to document the occupational dose of record. To serve the user of radiation information on a regular basis they import and export dose records from the dose of record computer database (EDBS-II). The responsibilities that ESH-12 Radiation Information Management Team has in meeting radiation information user requirements and correspondingly those of this procedure are referenced in the ESH-12 Quality Assurance Program Plan (ESH-12-03-02.1).

ESH-12 Dose Optimization Team has the following specific responsibilities relative to this procedure:

Import electronic dose data from the occupational radiation exposure computer database (EDBS-II)

Produce notification reports when action levels are exceeded.

When requested, provide consultation on efforts to manage doses for employees who are notified that they are approaching percentages of the dose limits.

6.0 PROCEDURE

Notifications The ESH-12 Dose Optimization Team will provide action level notifications in an effort to maintain radiation doses below the occupational dose limits. When the cumulative dose equivalent exceeds an action level, a notification action will be initiated. This notification should be completed promptly following the posting of the monitoring results to the EDBS-II database. Notification informs the workers, their line management and supporting organizations that the individual is approaching a specified percentage of the regulatory dose limits.

ESH-12 will make the following notifications:

Whole body dose	
Individual Worker cumulative annual Action Level	Notification
Fixed percentage of the ACL, 40%	Individual; ESH-1 Team Leader; Individual's Group Leader
Fixed percentage of the ACL, 60%	Individual; ESH-1 Team Leader; Individual's Group Leader
Fixed percentage of the ACL, 80%	Individual; ESH-1 Team Leader; Individual's Group Leader

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Note: The Administrative Control Level is
To Be Determined by the RPPM

Lens-of-the-Eye	
Individual Worker cumulative annual Action Level	Notification
5 rem (33% of limit)	Individual; ESH-1 Team Leader; Individual's Group Leader
10 rem (66% of limit)	Individual; ESH-1 Team Leader; Individual's Group Leader

Extremities/ Organ / Tissue	
Individual Worker cumulative annual Action Level	Notification
20 rem (40% of limit)	Individual; ESH-1 Team Leader; Individual's Group Leader
30 rem (60% of limit)	Individual; ESH-1 Team Leader; Individual's Group Leader
40 rem (80% of limit)	Individual; ESH-1 Team Leader; Individual's Group Leader, RPPM

Embryo/Fetus	
Individual Worker cumulative annual Action Level	Notification
Any measured dose > zero	Individual; Individual's Supervisor (or Group Leader)

Lifetime	
Individual Worker cumulative annual Action Level	Notification

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(Age in years x 1 rem) minus 5 rem	Individual; ESH-1 Team Leader; Individual's Group Leader; RPPM
Note: This notification is pending based on completion of the lifetime dose of record system. This system is under construction in the EDBS-II.	

The ESH-12 Dose Optimization Team notifications will rely on EDBS data current at the time the notifications are produced. Notifications will be forwarded within a reasonable amount of time after the monthly data is posted.

7.0 REQUIRED RECORDS

Notification records shall be retained by the ESH-12 Dose Optimization Team for a period of three years and then transferred to the ESH Division Record Center in accordance with the Records Management Plan, ESH-RADPR-RMP-02, R2. A sample of the individual and ESH-1/ Group leader notification is provided in the Attachment.

8.0 ATTACHMENT

1. **Individual notification**—EUDORA Pro E-mail memo marked “personal information” contains notice that individual has exceeded an action level and to contact group leader and ESH-1 Team Leader and/or Group Leader, cc: ESH-1/Group Leader/RPPM.
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9.0 REFERENCES

LPR 402-706.0, “Personnel Dosimetry,” March 6, 1998.
LPR 402-711.0, “Planned Special Exposures,” March 6, 1998.
LPR 402-714.0, “Occupational Dose Limits,” March 6, 1998.
LPR 402-718, “Training,” March 6, 1998.
LIR 402-706-01.1, “Personnel Dosimetry,” May 8, 1998.
References for the ESH-4 Personal Dosimetry Operations Team.

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Department of Energy Laboratory Accreditation Program (DOELAP), DOELAP Handbook (DOE/EH-0026).

Personnel Dosimetry Operations Team Quality Assurance Program Plan (ESH4-PDO-QAPP-01).

References for the ESH-12 Radiation Information Management Team Procedure, Quality Assurance Program Plan (ESH-12-03-02.1), undated.

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ATTACHMENT 1 Format for E-mail notifications

To: (individual)
From: "Bob B Bates, Jr." <bbates@lanl.gov>
Subject: PERSONAL INFORMATION - DOSIMETRY NOTIFICATION
Cc: (RPPM), (esh-1 team leader), (individual's group leader), bbates@lanl.gov

PERSONAL INFORMATION

According to the (*date*) dosimetry data, you have exceeded the notification action level of ____rem for (*whole body, extremity, etc.*).

Your specific calendar year-to-date dose is ____rem for (*whole body, extremity, etc.*).

Please contact your Group Leader or ESH-1 Team Leader if you have any additional questions.

This notification has been sent in accordance with ESH-RADPR-DP-01.0.

PERSONAL INFORMATION